

UNITED STATES DISTRICT COURT
EASTERN DISTRICT OF NEW YORK

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:
PARABIT SYSTEMS, INC., :
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Plaintiff, :
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- against - :
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SYNERGISTICS, INC., MILLENIUM GROUP, :
INC., ISLAND MASTER LOCKSMITH INC., :
IML SECURITY, GREGORY I. GOLDMAN, :
STEVEN R. LONDON, CATHY T. :
GOLDMAN, MARC SEIDENBERG, JOHN :
DOES I-III, :

Defendants. :
:
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MEMORANDUM
DECISION AND ORDER

19-cv-888 (BMC)

COGAN, District Judge.

This case is before the Court for claim construction of a patent in accordance with Markman v. Westview Instruments, Inc., 52 F.3d 967 (Fed. Cir. 1995), aff'd, 517 U.S. 370 (1996). At issue are Claims 14, 15, 16, and 17 of U.S. Patent No. 8,523,072 (the ‘072 patent).

The patent claims a card reader protection system that detects card reader skimming devices, *i.e.*, devices that obtain personal information from credit cards. A skimming device illegally installed over a legitimate card reading system, such as an ATM, surreptitiously collects card data that is then used to make fraudulent transactions. The system identified in the ‘072 patent is a card reader assembly designed to detect if an object is placed over a card slot using infrared proximity detection.

I. Claim construction principles

The Court construes patent claims by reference to the claim language, the patent specification, and the patent prosecution history, referred to collectively as the intrinsic evidence.

See Markman, 52 F.3d at 979. Patent claims are to be given their plain and ordinary meaning as they would be understood by a hypothetical person of ordinary skill in the relevant technological art. Phillips v. AWH Corp., 415 F.3d 1303, 1312-13 (Fed. Cir. 2005) (en banc).

In considering a disputed claim term, the Court considers the term's context in the claim, and, if applicable, how the term is used in other claims in the same patent. See id. at 1314. Each claim of a patent should be interpreted consistently, and each claim should be given meaning. Id. Different words in the claims are generally construed as conveying different meanings. Id. Further, differences between claims may be relevant: for example, under the doctrine of claim differentiation, the presence of a dependent claim that adds a particular limitation to an independent claim gives rise to a rebuttable presumption that the same limitation is not present in the independent claim. Id. at 1314-15.

After the claim language, the patent specification (the description preceding the numbered claims) is the most important source of intrinsic evidence; it is “the single best guide to the meaning of a disputed term.” Id. at 1321 (quoting Vitronics Corp. v. Conceptronic, Inc., 90 F.3d 1576, 1582 (Fed. Cir. 1996)). The specification provides context for claim terms, but limitations in the specification should not be imported into the claims themselves. Id. at 1323. The specification may include proprietary definitions that the patentee gave to certain terms, but it must “‘clearly express an intent’ to redefine the term” before the Court applies that definition in lieu of the plain and ordinary meaning. Thorner v. Sony Computer Entm’t Am. LLC, 669 F.3d 1362, 1365 (Fed. Cir. 2012) (quoting Helmsderfer v. Bobrick Washroom Equip., Inc., 527 F.3d 1379, 1381 (Fed. Cir. 2008)). The specification may also include a “disclaimer” or “disavowal” of the patent’s scope, but it must be similarly “clear and unmistakable.” Id. at 1366-67. If a claim’s language has a plain meaning, the Court should be wary of reaching a different

conclusion based on the specification. See Straight Path IP Group, Inc. v. Sipnet EU S.R.O., 806 F.3d 1356, 1361 (Fed. Cir. 2015).

The record from the patent’s prosecution, including all prior-art references that were cited during the patent’s examination, may also be considered as intrinsic evidence. Phillips, 415 F.3d at 1317. The court may exclude interpretations which were disclaimed during prosecution, but, as with disavowals of scope in the patent’s specification, a prosecution disclaimer must be “clear and unmistakable.” Omega Eng’g, Inc. v. Raytek Corp., 334 F.3d 1314, 1323-26 (Fed. Cir. 2003). Further, the prosecution history often lacks clarity and thus is “less useful” for claim construction purposes than, for example, the specification. Phillips, 415 F.3d at 1317.

If the meaning of a claim term remains ambiguous after the court considers the intrinsic evidence, the court may proceed to consider extrinsic evidence, which includes any relevant materials that were not part of the prosecution history, such as dictionaries, learned treatises, and expert testimony. Vitronics, 90 F.3d at 1583; see also Kaneka Corp. v. Xiamen Kingdomway Grp. Co., 790 F.3d 1298, 1304 (Fed. Cir. 2015). Decisions by other courts as to the plain and ordinary meaning of a term can also support a district court’s independent conclusion about a given term’s meaning. See V-Formation, Inc. v. Benetton Grp. SpA, 401 F.3d 1307, 1312 (Fed. Cir. 2005). But if the extrinsic evidence conflicts with the intrinsic evidence, the latter controls. See Phillips, 415 F.3d at 1317-18.

II. The disputed terms

With the foregoing principles in mind, the Court construes the disputed terms as follows.¹

¹ Some of the disputed terms, such as “an array of infrared proximity detectors” and “plurality,” appear within other disputed terms. For simplicity, the Court does not repeat the construction of standalone terms each time they appear within a disputed phrase, and instead deems them incorporated.

A. “Ambient light”

Both parties agree that “ambient light” means “light from the environment” but defendant’s proposed construction would also include the exclusion of “light emitted by the array of infrared proximity detectors.” The term appears in claim 17, which claims a controller that is “further configured to take a plurality of measurements by each of the infrared proximity detectors, each of the plurality of measurements being taken at a different sensitivity level to compensate for ambient light.”

As an initial matter, I agree with the parties that “ambient light” has a plain and ordinary meaning of “light from the environment.” To resolve the level of specificity embodied by the term as used in the claim, however, I need to consider the context in which it is used. The importance of ambient light is explained in the patent’s specification. A shortcoming of infrared proximity detection, “where the amount of light reflected off an object is measured,” is that it “involves measuring very low levels of light.” Detecting a black object is particularly difficult because “very little light reflects off of a black object,” and thus it requires using an “exquisitely sensitive sensor.” But because “normal sunlight contains extraordinary amounts of infrared light” it “will typically overwhelm a sensitive infrared detector and effectively blind it.”

Thus, in one embodiment, the controller takes measurements at six different sensitivity levels, with Level 1 being a “low sensitivity configuration that operates reasonably well in direct sunlight but can not detect black objects” and Level 6 being “an extremely sensitive configuration that detects black objects in an environment with low ambient light, but is completely blinded by even modest levels of sunlight.” “[H]igh sensitivity settings perform well when detecting black objects in low ambient light.” The system “compensate[s]” for ambient light by using different sensitivity settings. “[I]n a worst-case scenario where a black skimming

device is placed over (but not on) the slot, the skimming device will also block ambient sunlight, however the more sensitive settings will allow the controller to get a valid measurement.” In the design, “[a]ny measurement where the sensor reports saturation (i.e., blinding) is ignored” and “[t]his approach naturally compensates for the wide variation in ambient light.” “This method handles the full range of ambient light conditions with the full range of possible skimmers, e.g., skimming device of different colors or material.”

I conclude that the plain and ordinary meaning of “ambient light” and the discussion of the impact of high and low levels of ambient light, including sunlight, on the system demonstrate that ambient light does not include light generated by the system itself. Plaintiff’s argument that such a definition ignores crosstalk effects, whereby light from one active infrared proximity detector is incident upon a different infrared proximity detector in the array and thereby causes deleterious effects, is not persuasive. Such a construction would appear to define the relevant “environment” on a sensor-by-sensor basis, but neither the claim nor the specification supports such an interpretation; rather, both are concerned with compensating for the effect of environmental light on the system as a whole.

The Court therefore adopts defendants’ proposed construction of the term “ambient light” as meaning “light from the environment, excluding light emitted by the array of infrared proximity detectors.”

B. “An array of infrared proximity detectors”

Claims 14-17 contemplate “an array of infrared proximity detectors” as a component of the claimed card reader assembly. Defendants would define this as “an arrangement of multiple devices that emit and receive infrared light to sense the proximity (or lack thereof) of objects in the near vicinity of the detectors responsive to the emitted and received infrared light.” Plaintiff

would define it as “more than one sensor sensitive or responsive to infrared and/or other light to detect the presence of or absence of an object within a defined space.”

The first issue concerns whether “infrared proximity detectors” contemplates a system responsive only to infrared light or whether the system can be sensitive to infrared and/or other light. After oral argument, plaintiff clarified that its use of “and/or other light” in its proposed construction is not meant to exclude infrared light; rather, plaintiff contends that the detectors must respond to infrared light but may also respond to other types of light, such as visible light. Thus, both parties agree that the system must at least be sensitive to infrared light. I construe the claim in the same way because the inclusion of “infrared” in the term sets this limitation based on the plain and ordinary meaning of the word. I further conclude that plaintiff’s use of “and/or other light” would be misleading because it suggests that a system responsive only to “other light” could be contemplated by the claims.

The remaining question is whether the sensors can be sensitive to other types of light in addition to infrared. For the reasons described below, I conclude that the system can be sensitive to other types of light incidentally, but that, at a minimum, it must be sensitive to infrared.

The patent specification is illuminating in this regard. It states for one embodiment that “[t]he face plate includes an array of infrared proximity detectors, *e.g.*, two sets of infrared emitters and receivers that constantly monitor an area in front of a surface of the face plate. . . . It is to be appreciated that infrared emitters and receivers are exemplary and other types of light emitters and receivers are contemplated to be within the scope of the present disclosure.” This suggests that infrared proximity detectors, as the term is used in the patent, may also be responsive to other types of light. Further, the need to compensate for ambient light, described above, provides support for plaintiff’s proposed construction that the detectors may be

responsive to other types of light, such as visible light, in addition to infrared. If ambient light and high levels of sunlight potentially blind the sensors, it suggests that the sensors may be affected by other types of light. Finally, infrared light, like other types of light, exists as part of the electromagnetic spectrum. As plaintiff's expert explained, the spectrum does not contain uniquely defined boundaries; rather, the range for infrared light may be defined differently depending upon the scientific context or technical application. Thus, a system sensitive to infrared light need not be insensitive to other types of light.

The second issue concerns whether an infrared proximity detector can consist only of sensors, or whether the presence of an emitter is always contemplated. In arguing that an emitter need not be present, plaintiff contrasts Claims 14-17 with Claim 1 and its dependent Claim 2, neither of which is at issue in this case. Claim 1 describes an "array of light emitters and sensors" and dependent Claim 2 contemplates a card reader assembly "wherein the light emitters and sensors are infrared emitters and sensors." Plaintiff argues that construing infrared proximity detectors to require both emitters and sensors would make the latter claims redundant with the earlier ones.

"When different words or phrases are used in separate claims, a difference in meaning is presumed." Nystrom v. TREX Co., 424 F.3d 1136, 1143 (Fed. Cir. 2005). However, as defendants point out, "[d]ifferent terms or phrases in separate claims may be construed to cover the same subject matter where the written description and prosecution history indicate that such a reading of the terms or phrases is proper." Id.; see also Edwards Lifesciences LLC v. Cook Inc., 582 F.3d 1322, 1330 (Fed. Cir. 2009) (same); Wasica Fin. GmbH v. Cont'l Auto. Sys., Inc., 853 F.3d 1272, 1282 (Fed. Cir. 2017) (use of two words interchangeably in the specification and claims equates the two terms for claim construction purposes). Defendants argue that the

specification, prosecution history, and extrinsic evidence support their proposed construction that “infrared proximity detectors” are essentially “infrared emitters and sensors.”

Here, the intrinsic and extrinsic evidence convince me that the presence of an emitter is contemplated by the term infrared proximity detector but is not required. As an initial matter, Claim 1 and 2 describe a card reader assembly containing a face plate “including an array of light emitters and sensors” in which the emitters and sensors are infrared emitters and sensors, but Claims 14-17 describe a very similar system containing “an array of infrared proximity detectors.” The use of different terms in the claims suggest the terms have different meanings, see Nystrom, 424 F.3d at 1143, and patent claims are “presumptively different in scope,” see RF Delaware, Inc. v. Pacific Keystone Techs., Inc., 326 F.3d 1255, 1263 (Fed. Cir. 2003). Thus, the claim terms give rise to a presumption that an array of infrared proximity detectors is not simply an array of infrared emitters and sensors.

The specification provides further support for plaintiff’s proposed construction. It defines infrared proximity detection as a process “where the amount of light reflected off an object is measured.” That definition does not necessarily implicate the presence of an emitter. Although the specification’s discussion of infrared proximity detection and ambient light details the function of various sensors, it does not contain any language suggesting that an emitter must always be present. In fact, the specification’s context suggests that the system could work by measuring the reflectance of ambient light alone. The specification explains that “[r]eflectance-based proximity detection is particularly difficult if the object being detected is black, since very little light reflects off of a black object” and thus “detecting a black object by measuring the light that reflects off of it requires an exquisitely sensitive sensor.” “[N]ormal sunlight will typically overwhelm a sensitive infra-red detector and effectively blind it” but “if the sensor is configured

to be less sensitive so that direct sunlight does not blind it, the resulting sensitivity would be too low to detect black objects.” It then describes how the measurements may be performed at different sensitivity settings for the sensors to indicate if any particular sensor is being blinded by excessive light.

This description suggests that infrared proximity detection can concern the activity of sensors alone. It notes that sunlight will overwhelm a “sensitive infra-red detector” and uses near identical language to describe the issue as one of “sensitive sensor[s].” It also describes the solution over the course of several paragraphs in terms of the measurements and sensitivity of sensors, with no discussion of emitters.

Defendants’ argument primarily relies on the specification’s example of an array of infrared proximity detectors as “two sets of infrared emitters and receivers that constantly monitor an area in front of a surface of the face plate.” That paragraph explains, as described above, that “[i]t is to be appreciated that infrared emitters and receivers are exemplary and other types of light emitters and receivers are contemplated.” Although this demonstrates that emitters can be a component of an infrared proximity detector, it does not suggest that they must always be present. Rather, the use of “e.g.” suggests that two sets of infrared emitters and receivers are merely an example of such a system. In examining the specification for context, the Court does not import limitations from the specification into the claims, CollegeNet, Inc. v. ApplyYourself, Inc., 418 F.3d 1225, 1231 (Fed. Cir. 2005), and thus infrared proximity detectors should not be limited to systems with emitters based only on the example provided in the specification.

The same principle applies as to the example embodiments. Although defendants correctly note that every embodiment in the patent includes both emitters and sensors, the patent makes clear that the embodiments are “merely illustrative” and that “the legal scope of the

[patent's] disclosure is defined by the words of the claims set forth at the end.” Case law stands for the same proposition. See Dealertrack, Inc. v. Huber, 674 F.3d 1315, 1327 (Fed. Cir. 2012) (“As a general rule, ‘it is improper to read limitations from a preferred embodiment described in the specification – even if it is the only embodiment – into the claims absent a clear indication in the intrinsic record that the patentee intended the claims to be so limited.’”).

Defendants’ prosecution history argument is also not persuasive. The examiner listed three allowable features, the first of which is: “first and second inclined surfaces disposed at a predetermined angle relative to the first surface, each of the first and second inclined surface including at least one emitter and at least one sensor.” As plaintiff points out, the allowable features are separated by semicolons, suggesting that they apply to different groups of claims. It is not clear that the first listed phrase is meant to apply to all claims and Claims 14-17 each contain one of the other allowable features. Thus, there is no clear conclusion to be drawn from the prosecution history. See Phillips, 415 F.3d at 1317 (lack of clarity in prosecution history renders it “less useful” for claim construction purposes).

The extrinsic evidence also supports plaintiff’s position that an infrared proximity detector need not contain an emitter. Plaintiff’s expert demonstrated that proximity detection may take two forms, active and passive. Passive proximity detection does not require an emitter to detect the presence of an object based upon infrared light. Some passive proximity detectors are motion detectors that respond only to moving objects, but others – specifically thermopiles – can sense an object’s proximity without motion. In a system such as the one claimed here, a passive infrared proximity detector might include sensors configured to respond when an object becomes present within a predetermined region and would not require an emitter to do so. Because there is no indication that the patent is limited to active proximity detection alone, I

conclude that the array of infrared proximity detectors may include but does not require an emitter.

The third issue underlying the dueling constructions is whether an infrared proximity detector detects “the proximity (or lack thereof) of objects in the near vicinity” or “the presence or absence of an object within a defined space.” The former, defendants’ proposed construction, is of limited use because it includes the disputed word “proximity.” Defendants were not entirely clear in their briefs or when pressed at oral argument about this issue, but it appears that their construction would require the system to have a range-sensing element. I agree with plaintiff that “proximity” does not necessarily implicate an aspect of range or distance, but rather can refer to detecting the presence or absence of an object within a defined space. As used in the patent, the infrared proximity detectors sense the presence of card-skimming devices placed over the slot of the face plate, and there is no indication that any element of range is detected. Further, both plaintiff’s and defendant’s experts describe proximity detectors as systems used to detect the presence of nearby objects.

Finally, plaintiff’s proposed construction would have an “array” mean “more than one” and defendants’ construction would have it mean “an arrangement of multiple devices.” Neither proposal quite hits the mark. Under plaintiff’s construction, “array” would mean the same thing as “plurality,” which is used elsewhere in the claims, and defendants would read into the claim a multidevice component that is not supported by its terms. I agree with plaintiff that the claims and specification demonstrate that an array of infrared proximity detectors must include more than one detector, and with defendant that the plain meaning of the word “array” connotes an element of arrangement or order. See Array, Merriam-Webster, <https://www.merriam-webster.com/dictionary/array> (last visited May 21, 2021) (defining the verb as “to set or place in

order” or “to arrange or display in or as if in an array” and the noun as “a regular and imposing grouping or arrangement” or “a group of elements forming a complete unit”).

Accordingly, I construe the term “infrared proximity detector” to mean “an arrangement of more than one sensor sensitive or responsive to infrared light to detect the presence of or absence of an object within a defined space.”

- C. “configured to selectively activate the array of infrared proximity detectors to determine if an object is placed over the slot of the face plate”

The claims describe a controller “configured to selectively activate the array of infrared proximity detectors to determine if an object is placed over the slot of the face plate.” The parties’ proposed constructions for this term concern some of the issues already resolved in this opinion – namely, whether “other light” is contemplated and whether an emitter is required – and, except for the dispute over the meaning of “selectively activate,” their constructions differ only in minor ways. Defendants would construe “selectively activate” to mean the controller “has been set up to activate the array of infrared proximity detectors at selected times”; plaintiff would construe it as “arranged to actively acquire reading from” the array of infrared proximity detectors.

I agree with plaintiff that defendants’ incorporation of a time element is not supported. Although the specification contains descriptions of sequential steps for one embodiment, there is no indication in the claims or the specification that “selectively activate” was intended to be temporal. Plaintiff’s expert explained that the selective activation mechanism would be dependent on the algorithm that is employed. For example, the selective activation could be based on a spatial arrangement or threshold measurements. In these scenarios it is not technically incorrect to say that the system is activated at certain times, but the temporal aspect is not driving the activation. Defendants’ proposed construction would elevate the importance of

the temporal aspect to suggest that a time element drives the selectivity when that is not necessarily the case.

Accordingly, I construe “configured to selectively activate the array of infrared proximity detectors to determine if an object is placed over the slot of the face plate” to mean “arranged to actively acquire reading from the array of infrared proximity detectors to determine if an object is placed over the slot of the face plate.”

D. “configured to take a plurality of measurements by each of the infrared proximity detectors”

The term “configured to take a plurality of measurements by each of the infrared proximity detectors” appears in Claim 17 in conjunction with the above term to form a phrase that reads in part: “a controller configured to selectively activate the array of infrared proximity detectors to determine if an object is placed over the slot of the face plate, wherein the controller is further configured to take a plurality of measurements by each of the infrared detectors.”

The first issue is whether “plurality” means “one or more,” as plaintiff contends. I conclude that it does not. The claim terms clearly contemplate more than one measurement in explaining that “each of the plurality of measurements” would be “taken at a different sensitivity level.” Further, the word “plurality” is used twice in the detailed description, and each use connotes a meaning of more than one: (i) “when provided by a processor . . . or by a plurality of individual processors”; and (ii) “the Internet or any known network that couples a plurality of computers.” The intrinsic evidence thus demonstrates that “plurality” cannot mean “one.” In addition, the Federal Circuit has held on multiple occasions that “plurality” means two or more absent an overriding indication to the contrary. See Cheese Sys., Inc. v. Tetra Pak Cheese & Powder Sys., Inc., 725 F.3d 1341, 1348 (Fed. Cir. 2013) (“The district court correctly assessed that a plurality simply means two or more.”); Dayco Prod., Inc. v. Total Containment, Inc., 258

F.3d 1317, 1327-28 (Fed. Cir. 2001) (“In accordance with standard dictionary definitions, we have held that ‘plurality,’ when used in a claim, refers to two or more items, absent some indication to the contrary.”). There is no indication in this patent that “plurality” could mean anything other than “two or more.”

The second issue concerns defendants’ proposed construction that the controller is programmed to take “a set of multiple measurements.” Although I agree that multiple measurements are contemplated, the “set” language appears driven by the specification’s example of a sequential measurement cycle, and I do not otherwise find support for characterizing the measurements as grouped in a set.

Accordingly, I construe “configured to take a plurality of measurements by each of the infrared proximity detectors” to mean “arranged to take two or more measurements by each of the infrared proximity detectors.”

E. “plurality of measurements being taken at a different sensitivity level to compensate for ambient light”

This term appears in Claim 17 following the two above terms such that the full phrase reads: “a controller configured to selectively activate the array of infrared proximity detectors to determine if an object is placed over the slot of the face plate, wherein the controller is further configured to take a plurality of measurements by each of the infrared detectors, each of the plurality of measurements being taken at a different sensitivity level to compensate for ambient light.”

One issue on which the parties diverge is whether “taken at a different sensitivity level” need be further defined. Defendants contend that it does not, but plaintiff would construe it as measurements “taken and compared with one or more threshold levels.” Plaintiff’s construction is unclear and does not account for the different sensitivity levels being measured. Because there

does not appear to be a dispute over the scope of the phrase “taken at a different sensitivity level” and I believe the jury can sufficiently understand the meaning of the phrase, I will not further define it. See O2 Micro Int’l Ltd. v. Beyond Innovation Tech. Co., 521 F.3d 1351, 1360 (Fed. Cir. 2008) (district courts need not parse the meaning of every word in the asserted claims).

The other unresolved difference between the parties’ proposed constructions is relatively minor, with defendant describing the system as “compensat[ing] for the ambient light at the time” the measurements are taken and plaintiff describing it as “account[ing] for variations in ambient light.” I find that “account for ambient light” is consistent with the claim terms and the specification’s detailed discussion of the effect of ambient light on the system and the system’s solution for that issue.

Accordingly, I construe “plurality of measurements being taken at a different sensitivity level to compensate for ambient light” to mean “plurality of measurements taken at a different sensitivity level to account for ambient light.”

F. “a tamper switch”

The parties agree that “a tamper switch” should be construed as “a device or mechanism to signal or indicate interference with or physical movement of the device.” I find this construction to be supported by the claim terms, describing the tamper switch as “detect[ing] movement of the housing relative to the installation location,” and the specification, which notes the system’s use of tamper detection.

Accordingly, I construe “a tamper switch” to mean “a device or mechanism to signal or indicate interference with or physical movement of the device.”

G. “first and second inclined surfaces”

The parties agree that “first and second inclined surfaces” should be construed as “first and second portion of the front surface that are non-coplanar, or leaning at an angle/sloping

away, relative to the front surface.” This construction is supported by the ordinary and customary meaning of the phrase “inclined surfaces,” even as apparent to a layperson, the phrase’s use within the claims and specification, and the extrinsic evidence.

Accordingly, I construe “first and second inclined surfaces” to mean “first and second portion of the front surface that are non-coplanar, or leaning at an angle/sloping away, relative to the front surface.”

CONCLUSION

The Court hereby construes the disputed claim terms as described above. The parties shall proceed in a manner consistent with this opinion.

SO ORDERED.

Digitally signed by
Brian M. Cogan

U.S.D.J.

Dated: Brooklyn, New York
May 21, 2021